THE

NATURAL HISTORY

OF

BRITISH INSECTS;

EXPLAINING THEM

IN THEIR SEVERAL STATES,

WITH THE PERIODS OF THEIR TRANSFORMATIONS, THEIR FOOD, OECONOMY, &c.

TOGETHER WITH THE

HISTORY OF SUCH MINUTE INSECTS

AS REQUIRE INVESTIGATION BY THE MICROSCOPE.

THE WHOLE ILLUSTRATED BY

COLOURED FIGURES,

DESIGNED AND EXECUTED FROM LIVING SPECIMENS.

By E. DONOVAN.

VOL. V.

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MDCCXCVI.

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The NATURAL HISTORY of BRITISH BIRDS will be publiſhed in the ſame manner.

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* 10 *Ann. c.* 19. *ſ.* 101.

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THE

NATURAL HISTORY

OF

BRITISH INSECTS.

PLATE CXLV.

PAPILIO RHAMNI.

BRIMSTONE BUTTERFLY.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ clavated, or knobbed at the end. Wings, when at reſt, erect. Fly by day.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings angulated, entire, pale yellow, with a brown ſpot near the center of each. Underſide very pale yellow. Antennæ reddiſh.

PAPILIO RHAMNI. Alis integerrimis angulatis flavis, ſingulis puncto ferrugineo.—*Linn. Syſt. Nat.* 2. 765. 106. —*Fn. Sv.* 1042.

Papilio præcox ſulphurea ſive flavo viridis, ſingulis alis macula ferruginea notatis.—*Raj. Inſ.* 112. 4.
Sulz. Inſ. tab. 13. *fig.* 84.
Roeſ. Inſ. 3. *tab.* 46. *fig.* 1. 2. 3.
——— 4. *tab.* 26. *fig.* 1. 5.
Degeer Inſ. 1. *tab.* 15. *fig.* 1. 10.
Eſp. Pap. 1. *tab.* 4. *fig.* 4.
Schæff. Elem. tab. 94. *fig.* 7.
——— *Icon. tab.* 35. *fig.* 1. 3.

The Brimſtone Butterfly is common in many places in the month of June in the Fly ſtate. In the Caterpillar ſtate it is ſeldom taken, and when in chryſalis it is generally concealed among the herbage, where it is almoſt impoſſible to be diſcovered. In this ſtate, like all other ſpecies of the Butterfly tribe, it is ſuſpended by the tail, but has ſuch muſcular ſtrength, that if touched it can throw itſelf upright immediately, in the ſame manner as the Chryſalis of Phalæna pentadactyla. It feeds chiefly on buck-thorn, whence it has received the ſpecific name Rhamni.

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PLATE CXLVI.

BOMBYLIUS MEDIUS.

DIPTERA.

Wings two.

GENERIC CHARACTER.

Trunk taper, very long, between two horizontal valves.

SPECIFIC CHARACTER

AND

SYNONYMS.

Thorax and body yellowiſh brown, white at the extremity. Wings with brown ſpots.

BOMBYLIUS MEDIUS: alis fuſco punctatis corpore flaveſcente poſtice albo.—*Linn. Syſt. Nat.* 2. 1009. 2. 1919.

BOMBYLIUS PUNCTATUS niger villis fulvis, alis fuſco punctatis.—*De Geer. Inſ.* 6. 269. 2. *tab.* 15. *fig.* 12.

Schæff. Elem. tab. 27. 1.

——— *Icon. tab.* 78. *fig.* 3.

Fab. Syſt. Ent. 802. 2.

——— *Spec. Inſ.* 2. 473.

The Bombylius genus is very conciſe. *Fabricius* in the *Species Inſectorum* enumerates only nine ſpecies, of thoſe five are found in Europe, major, medius, minor, ater and fuſcus; the three former are natives of this country; the fourth is frequent in Germany, the laſt

laſt in Italy.—To theſe Fabricius has added a few ſpecies in his laſt work *Entomologia Syſtema*, which have not been deſcribed before, but they are all exotics.

The ſpecies figured in the annexed plate is not common. It lives on the nectareous juice of flowers. Is found in May.

FIG. III.

MUSCA HYPOLEON.

DIPTERA.

GENERIC CHARACTER.

A ſoft flexible trunk, with lateral lips at the end. No palpi.

SPECIFIC CHARACTER.

Eyes brown. Thorax black, margined with yellow. Abdomen black, with five yellow ſpots. Legs yellow.

Muſca Hypoleon. *Lin. Syſt. Nat.*
Stratiomys Hypoleon. *Fab. Mantiſa.* 2. *p.* 347. *N°* 63.

This Inſect was taken laſt Auguſt, flying among ſome ruſhes in Batterſea meadows. The line at Fig. 2. denotes the natural ſize.

PLATE CXLVII.

GRYLLUS GRYLLOTALPA.

Mole Cricket.

Hemiptera.

Shells or upper wings ſemi-cruſtaceous, not divided by a ſtraight ſuture, but incumbent on each other, beak curved down.

GENERIC CHARACTER.

Head maxillous, and with palpi. Antennæ filiform, or taper. Wings folded. Hind legs ſtrong for leaping.

SPECIFIC CHARACTER

AND

SYNONYMS.

Dark brown. Antennæ filiform, long, ſmall. Head long and ſmall. Four ſhort palpi. Corſelet cylindrical, ſhells ſmall, veined, wings long. Body hairy. Two ſmall tails. Fore feet large, palmated.

Gryllus gryllotalpa. *Linn. Syſt. Nat.* 2. 693. 10.

Gryllus ſupra fuſcus, ſubtus ferrugineo flavus, pedibus anticis latis, compreſſis denticulatis. *De Geer. Inſ.* 3. 517. 2.

Acheta gryllotaipa: alis caudatis elytro longioribus, pedibus anticis palmatis. *Fab. Syſt. Ent.* 279. 1.—*Sp. Inſ.* 1. 353. 91. 1.

Cateſby Carol. 1. *tab.* 8.

Friſch. Inſ. 11. *tab.* 5.

Seb. Muſ. 4. *t.* 89. *fig.* 3. 4.

Sulz. Inſ. tab. 9. *fig.* 59.

Roeſ. Inſ. 2. *Gryll. tab.* 14. 15.

It

It is ſcarcely poſſible to find a more ſingular creature than the Mole Cricket. It lives in burrows which it forms about an inch or more below the ſurface of the ground. The female depoſits a large bed of eggs about the ſize of ſmall peaſe, rather of an oval form, and browniſh colour. They are laid in a circular cavity, which is two or three inches wide, and near an inch in height. An aperture is made on one ſide, with an eaſy aſcent to the ſurface of the ground, and is ingeniouſly covered at the top with looſe earth. When the young larvæ are firſt hatched, they ſcarcely exceed the twelfth of an inch in length. They aſcend through the opening, and ſubſiſt on the plants neareſt their habitation, till their fore claws have acquired ſufficient ſtrength to burrow into the earth. In the larva ſtate they nearly equal the perfect Inſect in ſize, and reſemble it in every reſpect, except that they have no wings. The ſhells appear firſt; this is the pupa ſtate, and ſhortly after the membraneous wings appear alſo. It makes very little uſe of its wings, as they are too weak to ſupport its body long; and indeed it has not much occaſion for them, as it lives in the ſame manner as the Mole, and, like it, is furniſhed with powerful claws, with which it can burrow through the ground to a very conſiderable diſtance.

This deſtructive creature is generally found in great numbers wherever they once depoſit their eggs; for it is impoſſible to purſue and deſtroy them without doing much injury to the ground they infeſt. If they find a way into a kitchen-garden, they ſometimes deſtroy whole beds of young plants in the ſpace of one night; and this is not aſtoniſhing, when we conſider that they ſeldom eat any part except the roots, which they nip very cloſe, and conſequently the other parts muſt periſh. They ſeem particularly fond of Lettuces.

Fig. I. one of the fore claws.

PLATE

PLATE CXLVIII.

PHALÆNA POTATORIA.

DRINKER MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

BOMBYX.

Antennæ, male feathered, female, like a briſtle.

SPECIFIC CHARACTER

AND

SYNONYMS.

Yellow brown. Wings ſlightly ſcalloped; on each of the upper wings an oblique line, and two white ſpots near the anterior margin. Female paler colour than the male.

PHALÆNA POTATORIA: alis reverſis ſubdentatis flavis, ſtriga fulva repandaque, punctis duobus albis.—*Syſt. Ent.* 564. 28.
PHALÆNA maxima alis e fulvo flavicantibus. *Raj. Inſ.* 143. 3.
Goed. Inſ. 1. *tab.* 12.
Sepp. Inſ. 4. 37. *tab.* 8.
Schæff. Icon. tab. 67. *fig.* 10. 11.
Wilk. pap. 27. *tab.* 3. *b.* 2.

The Caterpillars of this Inſect feed on graſs, they are found in May, and the Moth appears about the middle of June.

The female differs in ſeveral reſpects from the male; it is of a buff colour, and is generally, though not always, larger. The chryſalis is black, and is encloſed in a ſtrong yellowiſh caſe, as ſhewn in the plate.

PLATE CXLIX.

ATTELABUS CURCULIONOIDES.

COLEOPTERA.

Wings two, covered by two ſhells, divided by a longitudinal ſuture.

GENERIC CHARACTER.

Antennæ thicker towards the end. Head narrow behind. Four joints in each foot.

SPECIFIC CHARACTER

AND

SYNONYMS.

Shells and thorax red. Head black.

ATTELABUS CURCULIONOIDES: niger thorace elytriſque rubis.—*Lin. Syſt. Nat.* 2. 619. 3.

Rhinomacer niger thorace elytriſque rubris, proboſcide longitudine capitis.—*Geof. Inſ.* 1. 273. 10.

Curculio Nitens, *Paykull. Monogr.* 130. 122.
Schæff. Icon. tab. 56. *fig.* 7.
Sulz. Inſ. tab. 4. *fig.* 12.

A pair of this very ſingular and rare ſpecies was taken on a young nut tree in Darent Wood, Dartford, early in May, 1795.

The remarkable ſtructure of it's head deſerves particular notice; it is ſhaped like a vaſe, and when the Inſect is alive is protruded

far beyond the thorax by it's long ſlender neck. It has alſo a very buſy motion of it's head from the right to the left when it runs: we obſerve a ſimilar motion in many Inſects; but as few have ſuch a ſlender neck, it is ſeldom ſo quick and repeated as in this.

The natural ſize is given in the upper part of the plate, the magnified appearance of the head is ſhewn below.

PLATE CL.

FIG. I.

PHALÆNA MARGINATA.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

NOCTUA.

Antennæ ſetaceous.

SPECIFIC CHARACTER

AND

SYNONYMS.

Upper wings, yellow brown, with four ſtreaks of red brown acroſs each; two circles of the ſame colour in the middle; ſpace next the exterior margin dark colour. Lower wings pale brown with a ſpot of black in the center, and band of black next the poſterior edge.

NOCTUA MARGINATA: Criſtata, alis deflexis flaveſcentibus, ſtrigis ferrugineis poſtice fuſcus. *Fabricius Spec. Inſ.* 2. 230. 108.—Mant. *Inſ.* 2. *p.* 166. *n.* 209.

Tabellar. Verz. II. heft. p. 41. n. 59. *Noctua rutilago* criſtata, alis deflexis flavis, ferrugineo ſtrigoſis faſciaque poſtica fuſca; poſticis pallidis limbo nigro.

Berliner. Mag. 3. Struct. p. 294. n. 41.

Phalæna Umbra. Die Zimmetmotte.

Geſenius handb. *p.* 162. *n.* 77. *Phal. Noct. Umbra.* Die Zimmetmotte.

De VILLIERS ent. *Linn.* 2. *p.* 258. *n.* 280. *Phal. Noctua Marginata. la Bordure.*

Phalæna Marginata. Klemann's. Inſecten Geſchichte, *&c.* Nurnberg, 1792. Vol. 2. *pl.* 7. *fig.* 6. 7. 8.

The

The Synonyms of this rare Insect have been more minutely collected, than is common in the descriptions of this work, as it has been generally considered an undescribed species. Mr. Crow, of Feversham, who has enriched the collections of several gentlemen in London, with many curious Insects, met with two or three specimens of this Moth, and among others sent one to Mr. Bentley, a collector in London, a few years since. I have to acknowledge being favoured with this Insect by LORD WILLIAM SEYMOUR; his Lordship met with it in Wiltshire.

Fabricius, in the *Species Insectorum*, has made a very considerable error; and which it is proper to notice in this place, "*Noctua Marginata*, native of America," and described from the Collection of Dr. Hunter, occurs in page 216. spec. 40; and again in page 230. spec. 108, "*Noctua Marginata*, a native of Europe," the present specimen. The former he has indeed changed to "*Noctua Marginella*" in his last work, *Entomologiæ Systematicæ*, but without the slightest notice of the first mistake, or any reference to the *Species Insectorum*.

It appears to be a native of Germany by the last work published by *Klemann*, though perhaps it is very rare in that country as it is given in a supplementary series of plates to his work, and his plates are but a supplement of the more rare Insects, not figured in Roesel's publications.

PHALÆNA

PHALÆNA AURANTIAGO.

ORANGE MOTH.

LEPIDOPTERA.

PHALÆNA.

SPECIFIC CHARACTER.

Upper wings orange colour with ſpots, waves, and ſtreaks of brown; ſeveral minute white ſpots along the anterior margin. Body and lower wings cream colour, with a pale wave in the middle of the latter.

This is certainly a non-deſcript. *T. Marham, Eſq. Sec. L. S.* has deſcribed it in his manuſcript notes under the ſpecific name Aurantiago.

The ſpecimen from which the figures in the annexed plate are copied was found on an oak in Richmond Park, in June, 1793. The under-ſide as well as upper-ſide is ſhewn in the plate.

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PLATE CLI.

FIG. I.

MUSCA BRASSICARIA.

CYLINDRICAL FLY.

DIPTERA.

Wings 2.

GENERIC CHARACTER.

A ſoft flexible Trunk, with lateral lips at the end. No Palpi.

SPECIFIC CHARACTER

AND

SYNONYMS.

Thorax greeniſh. Abdomen cylindrical; ſecond and third Segment reddiſh yellow.

MUSCA BRASSICARIA: antennis ſetariis nigra, abdomine cylindrico: ſegmento ſecundo tertioque rufis. *Fab. Spec. Inſ.* 2. 36. 443.—*Syſt. Ent.* 25. *p.* 88.—*Mant. Inſ. I.* 2. 43. 345.—*Ent. Syſt.* 4. 327. 63.

Muſca cylindrica: Antennis ſetariis piloſa cinereo nigra, abdomine cylindrico elongato medio rufo. *Degeer. Inſ.* 6. *n.* 9. *p.* 30. *tab.* 1. *fig.* 12.

Mouche cylindrique. Ibid.

Die Kohlfliege. *Panz. Faun. Inſ. Germ.*

The Muſcæ, if we follow the arrangement of Linnæus, form by far the moſt extenſive of any genus (except Lepidoptera) we have at preſent any knowledge of. Fabricius enumerates in his laſt * Work no leſs than 202 Species, under the generic title *Muſca*; independent of theſe we find 122, under the head *Syrphus*; 22 under *Rhagio*, and 25 under *Stratiomys*, all of which (with ſome exceptions) would make by Linnæan arrangement 349 ſpecies; not to notice the Inſects of the ſame tribe included under his generic appellations, *anthrax*, *bibio*, *nemotelus*, &c.

Muſca Braſſicaria is not uncommon in gardens in May and June. Sometimes found on Willows.

Fig. 1. One of the Antennæ magnified.

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* *Syſt. Ent.*

FIG. II.

APIS TUMULORUM.

SMALL, LONG HORNED BEE.

HYMENOPTERA.

Wings four, generally membraneous. Tail of the female armed with a ſting.

GENERIC CHARACTER.

Jaws, with a Trunk bent downwards. Antennæ elbowed in the middle. Wings plain. Body hairy. Abdomen connected by a pedicle.

SPECIFIC CHARACTER

AND

SYNONYMS.

Antennæ rather longer than the body. Entirely black, with greyiſh hairs. Jaws yellow.

APIS TUMULORUM. *Lin. Syſt. Nat.* 2. 953. 2. *edit.* 3.—*Fn. Sv.* 1685.

Apis Tumulorum: Antennis filiformibus longitudine corporis nigri, maxillis flavis. *Fab. Syſt. Ent.* 388. 57.—*Spec. Inſ* 1. 486. 122.

Eucera Tumulorum, vol. 2. 344. 159.

Sulz. Hiſt. Inſ. tab. 27. *fig.* 14.

This extraordinary Bee is found in Summer, againſt banks, when the weather is fine. Were it not for the remarkable length of the Antennæ, it would ſcarcely deſerve notice, though it is rather a ſcarce Inſect.

FIG. III.

TABANUS PLUVIALIS.

SPECKLED-WING. STINGING FLY.

DIPTERA.

Wings 2.

GENERIC CHARACTER.

Antennæ conic, of four Segments. Trunk fleſhy, terminated by two lips. Palpi one on each ſide of the Trunk.

SPECIFIC CHARACTER

AND

SYNONYMS.

Eyes green. Thorax brown grey, with ſeven longitudinal lines. Abdomen grey with marks of black. Wings brown ſpeckled with white.

TABANUS PLUVIALIS. *Lin. Syſt. Nat.* 16. *p.* 1001. *edit.* 13. *n.* 16. *p.* 2885.—*Fn. Sv. n.* 1887.

Tabanus Pluvialis: Oculis faſciis quaternis undatis, alis fuſco punctatis. *Fab. Syſt. Ent. n.* 16. *p.* 790.—*Spec. Inſ.* 2. *n.* 23. *p.* 459.—*Mant. Inſ.* 2. *n.* 26. *p.* 356.—*Ent. Syſt. vol.* 4. *p.* 369. 134. 32.

Tabanus fuſcus, alis cinereis, punctis numeroſiſſimis albis. *Geoff. Inſ. T.* 2. *n.* 5. *p.* 461.

Le Taon à ailes brunes piquées de blanc. *Geoff. Inſ.*

Die Regenbreme. *Panz. Faun. Inſ. Germ.*

Reaum. Inſ. 4. *tab.* 18. *fig.* 1.

Harris Inſ. angl. tab. 7. *fig.* 8.

Scop. carn. n. 1012.
Schrank. Inſ. auſtr. n. 978.
Schäffer. Icon. Inſ. Ratiſbon. tab. 85. *fig.* 8. 9.

During all the Summer months we find this tormenting little Inſect in great abundance, in the narrow lanes and ſkirts of woods. If it ſettles on the hands, face, or legs, its ſting is very acute, and excites an inflammation and ſwelling in the ſtung-part, very ſimilar to that we experience from the ſting of the *Tabanus cæcutiens*, deſcribed in Plate 131, of this Work.

Its ſting is moſt violent about the middle of the day.

FIG.

FIG. IV.

MUSCA BOMBYLANS.

DIPTERA.

MUSCA.

SPECIFIC CHARACTER

AND

SYNONYMS.

Antennæ feathered. Black and hairy; extremity of the Abdomen yellow.

MUSCA BOMBYLANS. *Lin. Syſt. Nat.* 25. *p.* 983.—*Fn. Sv. n.* 1792.
Syrphus bombylans: Antennis plumatis tomentoſus niger, abdomine poſtice rufo.—*Fab. Syſt. Ent. n.* 1. *p.* 762.—*Spec. Inſ.* 2. 1. *p.* 421.—*Mantiſſa Inſ.* 2. 1. *p.* 334.—*Ent. Syſt.* 4. *p.* 279. 232.
Conops pocopyges. Pod. Muſ. græc. n.
Die hummelartige Schwebfliege. *Panz. Faun. Inſ. Germ.* *Harris. Inſ. angl. tab.* 10. *fig.* 3.

This is a common Fly; and is found in woods in May. A figure of one of the Antennæ is given at Fig. 4.

FIG. V.

MUSCA TRILINEATA.

TRILINEATED FLY.

DIPTERA.

MUSCA.

SPECIFIC CHARACTER

AND

SYNONYMS.

Yellow green. Three longitudinal black lines on the Thorax. Abdomen marked with black. Two teeth on the ſcutellum.

MUSCA TRILINEATA: Antennis filatis clavatis, ſcutello bidentato, corpore viridi, thorace lineis abdomineque faciis nigris. *Lin. Syſt. Nat. n.* 6. *p.* 980. *edit.* 13. *n.* 6. *p.* 235.

Stratiomys trilineata: Scutello bidentato, corpore viridi, thorace lineis abdomineque faciis nigris. *Fab. Syſt. Ent. n.* 7. *p.* 760.—*Spec. Inſ.* 2. 9. *p.* 418.—*Mantiſſa. Inſ.* 2. 14. *p.* 331.

Stratiomys luteo-vireſcens. *Geoff.* Paris. T. 2. n. 7. p. 482.

Stratyomys faſciata. *Fourcroy. Ent.* Paris. 2. 7. p. 468.

Grüne Waffenfliege. Dreygeſtreifte Waffenfliege.

La Mouche-armée jaune à bandes noires. *Panz. Faun. Inſ. Germ.*

A very curious and ſcarce ſpecies. It was found among ſome elder leaves which were gathered in Batterſea Meadows, early in June, 1795.

When

When this Inſect is alive the yellow colour of the body is exceedingly bright, and partakes ſomewhat of a metallic and green hue in ſeveral parts, but this brilliant appearance gradually fades after death.

The line denotes the natural ſize, it being neceſſary to give a magnified figure of ſuch a minute Inſect.

PLATE CLII.

PHALÆNA AESCULI.

Wood Leopard Moth.

Lepidoptera.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings white, with many dark blue round ſpots. Six ſpots on the Thorax.

Phalæna Aesculi elinguis lævis nivea, antennis thorace brevioribus, alis punctis numeroſis cœruleo nigris, thorace ſenis. *Lin. Syſt. Nat.* 2. 833. 83.—*Fn. Sv.* 1150.

Bombyx Aeſculi, Mant. Inſ. 2. 116. 85.

Hepialus Aeſculi. Fab. Spec. Inſ. 2. 208. 146. 4.

Coſſus Aeſculi. *Wien. Verzeichn. tab. tit. præf. Acta Soc. Berol. phys.* 3. *tab.* 1. *fig.* 1. 2.

Pod. Inſ. 88. 16.

Wood Leopard Moth. *Harris Inſ. angl.*

It is to a very ſingular and trivial circumſtance we are indebted for the ſpecimens of both the male and female of this rare ſpecies. They were obſerved together on the bark of an elm tree in the Mall in St. James's Park, by ſome ignorant perſons, who being terrified at their extraordinary appearance, attempted to deſtroy them, but a gentleman

gentleman who happened to paſs by at the ſame inſtant, having either more curioſity or leſs apprehenſion of danger from touching them, took them up, and preſerved them. We conclude they could have but juſt before come out of their chryſalides, the female being in a moſt perfect ſtate, and the male equally fine, except that it had loſt one of its upper wings.

We muſt claim the indulgence of the more ſcientific part of our readers for the minuteneſs with which we have detailed ſuch trifling circumſtances; it can indeed afford very little amuſement to them, but, it may ſerve to remind many who are not in the habit of collecting Inſects, that their occaſional endeavours would be likely to extend the Science of Entomology; for it often happens that the moſt aſſiduous Naturaliſts are indebted to ſuch perſons for the rareſt ſpecimens their cabinets can boaſt.

The Moths were found late in June. On examining the crevices of ſome of the trees near the ſpot, we found a quantity of the eggs; they were rather of an oval form, and linked together like a chain, as ſhewn in the Plate; and having carefully preſerved them in a branch of a plumb-tree * under the bark, we had the ſatisfaction to ſee ſome young Caterpillars produced in a few weeks. But either owing to the want of proper food or good management they all died ſoon after except two or three, and theſe never arrived at their full ſize. The Caterpillar from which the Figure in the annexed is copied, was found under the bark of one of the elm-trees in St. James's Park, but being diſturbed, it never became a Pupa. The Caterpillar makes a caſe, of the duſt of the wood which it gnaws, and cements together, and in this it lies concealed beneath the bark. The head of the Caterpillar is hard, and the firſt ring is furniſhed with a ſtrong horny ſubſtance.

Harris, about twenty years ago, was ſo fortunate as to breed this Moth from the Caterpillar, and we are not acquainted with any

* I frequently find, when the Plant of an Inſect is unknown, that they will live on the Plumb-tree, when they refuſe other food.

ſimilar

ſimilar inſtance ſince that time. In the Plates of Roeſel, vol. 4, a Figure of the Caterpillar is given, but without either Pupa or Moth, ſo that were it not for the reference and authority of Linnæus, and ſince his time, of Fabricius, it would ſcarcely be known to what Inſect it belonged. The eggs we have not found either figured or deſcribed, though they are ſo very ſingularly united together, and would certainly have been noticed by the ingenious Roeſel if he had met with them.

The Antennæ of the female are ſetaceous, or like a briſtle, but that part of the male is both ſingular and beautiful; it is elegantly feathered next the baſe, and terminates in a briſtle, like the female.

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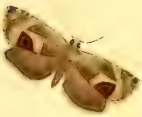

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PLATE CLIII.

FIG. I.

PHALÆNA EUPHORBIATA.

SMALLEST QUAKER MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

GEOMETRA.

SPECIFIC CHARACTER

AND

SYNONYMS.

Entirely browniſh grey without ſpots.

PHALÆNA EUPHORBIATA: ſeticornis alis fuſco cinereis immaculatis. *Fab. Mantſ.* 2. *p.* 209. *n.* 202. *Ent. Syſt. T.* 3. *p.* 2. 197. 246.

DE VILLERS Ent. Lin. T. 4. p. 509. *De l'Euphorbe.*

Hubners Beitr. 1. B. 2. Th. p. 15. *Ph. G. unicolorata.* Tab. 3. fig. L. 2. B. 4. Th. p. 112.

Langs Berz. p. 189. n. 1361. 62. Ph. *G. unicolorata.* Der Kleingrave Nachtfalter.

Berlin. Magaz. 4. Th. p. 524. n. 44. *Ph. faſcata.* Der Sperling.

Der Wolfsmilchſpanner. *Klem. Inſ. Suppl.* T. 2. Tab. 24. fig. 1. *Wien. Verz.* 116. 9.

Hybn. Beytr. 2. tab. 3. fig. L.

This is not an uncommon Moth in ſome places, yet we find no figure of it in any work on Britiſh Inſects. In the work of Klemann, quoted in the Synonyms, a figure of it is given without the Larva; from this we may ſafely infer it is ſeldom found in that ſtate, or that indefatigable writer would certainly have added it to his Plate.

It is ſuppoſed to feed on ſome plant of the Euphorbia genus, and hence the ſpecific names fuſcata and unicolorata have been abandoned.

The Moth was found late in May.

FIG.

FIG. II, III, IV.

PHALÆNA UDDMANNIANA.

CHESNUT SPOT MOTH.

LEPIDOPTERA.

PHALÆNA.

Tortrix. Lin.
Pyralis. Fab.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings greyiſh brown. An angular ſhaped cheſnut coloured ſpot on the poſterior margin of the firſt pair.

TORTRIX UDDMANNIANA: alis cinereis: macula brunnea communi tranſverſa. *Lin. Syſt. Nat.* 2. 880. 320.—*Fn. Sv.* 1332.

Pyralis Uddmanniana. Fab. Spec. Inſ. 2. *p.* 279. *n.* 22.—*Mant. Inſ.* 2. *p.* 228. *n.* 35.

Wiener Verz. p. 130. Fam. D. grave Blattwictler (Ph. Tortrices cinereæ) &c. *l'Uddmann.* de VILLERS ent.

Der himbeer unkler. *Kleman. Inſ.* Suppl. Tab. 24.

De PRUNNER larv. d'Eur. p. 35. *Tortrix Uddmanniana.*

This is much rarer than the preceding ſpecies, and is alſo a far more beautiful Inſect. We have never found it except about the

 hazel

hazel nut trees in Coombe Wood, Surry, though it may, no doubt, be met with wherever theſe trees are found in abundance. Is found in Germany.

The Caterpillar changed to Chryſalis in May. Moth appeared in July.

FIG.

FIG. V.

PHALÆNA CARNELLA.

ROSE COLOURED VANEAR.

LEPIDOPTERA.

PHALÆNA.

Tinea.

SPECIFIC CHARACTER

AND

SYNONYMS.

Upper Wings roſe colour, anterior margin whitiſh, poſterior yellowiſh. Lower Wings pale.

TINEA CARNELLA: alis anticis flavis: lateribus ſanguineis. *Lin. Syſt. Nat.* 2. 887. 353.—*Fab. Spec. Inſ.* 2. 293. 21. *Ent. Syſt.* 3. *Pars.* 2. 296. 41. *Wien. verz.* 138. 13. *Schœff. Icon. tab.* 147. 2. 3. *Sulz. Hiſt. Inſ. tab.* 23. *fig.* 12.

Purple Vanear? Harris. Inſ.

The Larva of this rare and elegant Inſect is wholly unknown to Collectors of Britiſh Inſects. The Moths were formerly taken at the Chalk-pits, near Charton, in Kent, but either the brood has been deſtroyed, or the ſeaſons ſo unfavourable, that few, if any, have been ſeen for ſeveral years. The Moth comes forth in May, and, like other ſpecies of the ſame tribe, fly very low, and always ſettle on the blades of graſs, with their Wings folded, ſo that Collectors can readily diſtinguiſh them from other Moths.

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PLATE CLIV.

FIG. I, II, III.

SCARABÆUS NOBILIS.

Scarce Green Chaffer.

COLEOPTERA.

Wings two, covered by two ſhells, divided by a longitudinal ſuture.

GENERIC CHARACTER.

Antennæ clavated, extremities fiſſile *. Five joints in each foot.

SPECIFIC CHARACTER

AND

SYNONYMS.

Shining green; ſhells, full of wrinkles. Thorax not projecting.

SCARABÆUS NOBILIS: ſcutellatus muticus auratus, abdomine poſtice albo punctato. *Linn. Syſt. Nat.* 2. 558. 81.—*Fn. Sv.* 401.

Cetonia nobilis: aurata, abdomine poſtice albo punctato, elytris rugoſis. *Fabr. Syſt. Ent.* 43. 5.—*Spec. Inſ.* 1. 6. *p.* 51.

Scarabæus viridis nitens, thorace, infra æquali, non prominente. *Geoff. Inſ.* 1. 73. 6.

Scarabæus auratus ſecundus. *Roeſ. Inſ.* 2. *Scarab.* 1. *tab.* 3. *fig.* 1, 2, 3, 4, 5.

Scarabæus viridulus ſcutellatus aureo viridis nitidus, elytris rugoſis abdomine poſtice albedine maculato, pectore mutico. *Degeer. Inſ.* 4. 297. 26.

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* Divided into laminæ, or parts.

This ſpecies is not much unlike the Scarabæus Auratus (large green Beetle, or Roſe Chaffer) but is far more ſcarce. The larva lives entirely under the ſurface of the ground, and feeds on ſmaller Inſects. The Jaws are very ſtrong, but in other reſpects it appears unable to defend itſelf if attacked. It is very ſluggiſh, and always lies with its body coiled round. The caſe in which it remains in the pupa ſtate is very ſtrong, and conſiſts of ſmall bits of wood, pebbles, earth, &c. cemented and faſtened together, by a ſlight ſilky web. It continues during the Winter in this caſe, and in May the Beetle comes forth.

Fig. 1. The larva. Fig. 2. Pupa. Fig. 3. Perfect Inſect.

FIG. IV.

SCARABÆUS LUNARIS.

LUNATED BEETLE.

COLEOPTERA.

SCARABÆUS.

SPECIFIC CHARACTER

AND

SYNONYMS.

Entirely black. On the head a lunated helmet and an erect horn. Thorax with three horns; the center one obtuse and divided by a longitudinal furrow. Eight furrows down each shell.

SCARABÆUS LUNARIS: exscutellatus, thorace tricorni, intermedio obtuso bifido, capitis cornu erecto. clypeo emarginato. *Linn. Syst. Nat.* 2. 543. 10.— *Fn. Sv.* 379.
Fab. Spec. Inf. 1. 24. 108.

Copris capitis clypeo lunulato, margine elevato, corniculo denticulato. *Geoff. Inf.* 1. 88. 1.

Scarabæus ovinus tertius s. capite operculato. *Raj. Inf.* 103.

Scarabæus nasicornis medius. *Frisch. Inf.* 4. 25. *tab.* 7.
Pet. Gazoph. tab. 138. *fig.* 4.
Schæff. Icon. tab. 63. *fig.* 2. 3. ♂. ♀.
Bergstræff. Nomencl. 1. 5, 9. *tab.* 1. *fig.* 9. *et tab.* 4. *fig.* 7.

This is by no means a common Beetle. It is found generally amongst the loose sand on heaths, the dung of animals, or carrion. The female is nearly as large as the male, and has not the erect horn on the head.

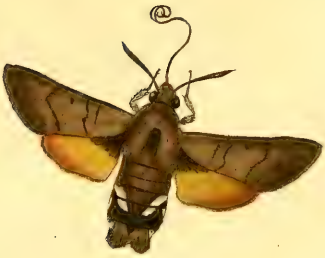

PLATE CLV.

SPHINX STELLATARUM.

HUMMING-BIRD HAWK-MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ thickeſt in the middle. Wings, when at reſt, deflexed. Fly morning and evening only.

SPECIFIC CHARACTER

AND

SYNONYMS.

Abdomen thick, brown, and hairy; tufted at the extremity. Firſt Wings greyiſh brown, with waves of black acroſs. Second Wings orange colour.

SPHINX STELLATARUM. *Linn. Syſt. Nat.* 2. 803. 27.—*Fn. Sv.* 1094.
Seſia Stellatarum: abdomine barbato, lateribus albo nigroque variis, alis poſticis ferrugineis. *Fab. Syſt. Ent.* 548. 3.
Fab. Spec. Inſ. 2. 154. 6.
Papilio velociſſima, alis albis brevibus, corpore craſſo inter volitandum ſtridorem edens. *Raj. Inſ.* 133. 1.
Roeſ. Inſ. 1. *papilionum Nocturnorum. Tab.* 8.
Bradl. Nat. tab. 26. *fig.* 1. A.
Reaum. Inſ. 1. *tab.* 12. *fig.* 5. 6.

PLATE CLV.

Merian. Europ. 2. 33. *tab.* 29.
Schœff. Elem. tab. 116. *fig.* 3.
——— *Icon. tab.* 16. *fig.* 1.
Le Colibri. *Harris. Aurel. pl.* 24.

There are two ſorts of Caterpillars belonging to this ſpecies. They are alike in ſize and form, but are very different in colour. One ſort is green, the other purpliſh red, varying much in different ſpecimens, being ſometimes almoſt brown. Both ſorts are ſpotted with minute white ſpecks, which are diſpoſed in regular order over every part, except the belly.

Every Caterpillar is alſo furniſhed with a poſterior horn, which is blue from the baſe for more than half its length: the tip is bright orange colour.

The Chryſalis, which is of a pale yellowiſh-brown at firſt, changes to a more duſky colour before the Sphinx comes forth.

The Caterpillars feed on ſeveral kinds of plants, but ſeem chiefly to prefer thoſe of the *Galium* genus, particularly, the White * or Yellow † Lady's Bedſtraw, and Cleaves, or Gooſegraſs ‡. They go into the ground about the latter end of Auguſt, and remain there in chryſalis till April, or May at the fartheſt.

It is rather a ſcarce Inſect: ſometimes viſits gardens in the winged ſtate; and extracts the ſweeteſt juices of the flowers, by darting its long proboſcis, or trunk into them; it is from this peculiarity, and its hovering over the flowers at the ſame time, like the Humming Birds when they feed, that it has received its Engliſh appellation.

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* *Galium Paluſtre.*
† ——— Verum.
‡ ——— Aperine.

This

This Inſect is found in moſt parts of Europe, but it appears is more frequent in Northern Countries. A near variety of it is found in Botany-Bay; and we have ſpecimens of it from North America.

Sphinx Belis of Linnæus and Cramer, is deſcribed amongſt the Synonyms given by Fabricius, as a variety of *Sphinx Stellatarum*, and *Sphinx Ciculus* of Cramer ſcarcely differs from our Inſect.

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PLATE CLVI.

FIG. I.

ARANEA EXTENSA.

APTERA.

No Wings.

ARANEA.

SPECIFIC CHARACTER

AND

SYNONYMS.

Abdomen long, greeniſh, and ſilvery. Legs very long.

ARANEA EXTENSA : abdomine longo argenteo vireſcente, pedibus longitudinaliter extenſis. *Linn. Syſt. Nat.* 2. 1033. 22. *Fn. Sv.* 2011.

Aranea retiaria abdomine elongato griſeo fuſco, pedibus longitudinalibus extenſis.

Degeer. Inſ. 236. 1.
Geoff. Inſ. 2. 642. 3.
Liſt. Aran. fig. 3.
Raj. Inſ. 19. 3.

This ſpecies is particularly diſtinguiſhed by the length and poſition of its legs. It runs very faſt. Our ſpecimen was taken on an oak, and we do not think it is a ground Spider.

Found in Darent wood, Dartford, in Auguſt.

FIG.

FIG. II.

ARANEA GLOBOSA.

GLOBULAR SPIDER.

APTERA.

GENERIC CHARACTER.

Legs eight. Eyes eight.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black. Abdomen globular, ſides crimſon.

ARANEA GLOBOSA: nigra abdominis lateribus ſanguineis. *Fab. Ent. Syſt.* 2. 411. 15.

We have met with this beautiful Spider ſeveral times in Caenwood. It was commonly ſeen on the young oaks. One being confined in a box ſpun a ſmall web, of a very ſlight texture. Found in May and June.

FIG.

FIG. III.

ARANEA CINEREA.

APTERA.

ARANEA.

SPECIFIC CHARACTER

AND

SYNONYMS.

Abdomen aſh colour, or grey. Thorax and feet yellow-brown.

ARANEA CINEREA: abdomine cineraſcente. Thorace pedibuſque teſtaceis. *Panzer.*

Die aſchgrave Spinne. *Panz. Inſ. German.*

Aranea Cicurea, pallide rubra abdomine ovato cinereo. *Fab. Ent. Syſt.* 2. 410. 12?

A common Spider in woods. Found in May and June.

FIG.

FIG. IV.

PHALANGIUM BIMACULATUM.

MINUTE BLACK SPIDER, WITH TWO WHITE SPOTS.

APTERA.

No wings.

GENERIC CHARACTER.

Legs eight, eyes two. Abdomen rounded.

SPECIFIC CHARACTER

AND

SYNONYMS.

Very minute. Entirely black, except two white ſpots on the Thorax.

PHALANGIUM BIMACULATUM: abdomine atro: maculis duabus albis. *Fab. Ent. Syſt. v.* 3. *n.* 8. *p.* 431.
Die zwey fleckigte Afterſpinne. *Panz. Faun. Inſ. Germ.*

This is a very minute Inſect; the figure is more than twice the natural ſize. It was found amongſt a great variety of other ſpiders, in Darent wood, Dartford, about the middle of Auguſt.


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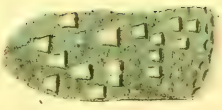
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PLATE CLVII.

PHALÆNA BERGMANNIANA,

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

Tortrix *Linn.* Pyralis *Fab.*

SPECIFIC CHARACTER

AND

SYNONYMS.

Firſt wings yellow, varied with orange colour. Four brown marks acroſs each wing, with ſpots and ſtreaks of ſilver down them. Inferior wings grey.

PHALÆNA BERGMANNIANA. *Linn. Syſt. Nat.* 2. 878. 307. *Fn. Sv.* 1314.

PHALÆNA BERGMANNIANA: alis anticis luteis flavo punctatis, faſciis quatuor argenteis, tertia bifida. *Fab. Syſt. Ent.* 652. 43. *Spec. In.* 2. 285. 59.

Phalena antennis filiformibus, alis luteis nitidis, ſtrigis quatuor argenteis.

Phaléne à antennes filiformes à trompe à ailes larges d'un jaune orange luiſant avec quatre rayes tranſverſes d'un brun argenté. *Phaléne chappe jaune à rayes argentées. Degeer Inſ.* 2. *p.* 1. *p.* 469. *n.* 4.—*Inſ.* 2. 1. 346. 4.

Phal. Pallium aurantium. ſpirilinguis, antennis filiformibus. alis rhombeis aurantiis nitidis ſtrigis 4 fuſco argenteis. RETZ. *Degeer, p.* 52. *n.* 147.

Phal.

Phal. Bergmanniana. Alæ anticæ flavæ nodulis binis, faſciiſque (4) argenteis margine fuſco-ferrugineo. SCOPOLI *ent Carn. p.* 232. *n.* 584. *fig.* 584.

Tortr. eur. *Bergmanniana. Jungs alphab. Berſ.* 2. *Th. p.* 75.

Tortrix Bergmanniana. la Bergmann. *de* VILLERS *ent. Lin. T.* 2. *p.* 396. *n.* 671.

Der Bergnannſche unkler. *Kleeman Inſ. Nr.* 45. 1794.

Metalliſche Blattwickler (*Phal. Tortrices Metallicæ*) n. 5. Tortrix. Bergmanniana *Wiener. Verz. p.* 126. *Fam. B.*

Bergmannſwickler. *Brahms Hanbd.* 2. *Th.* 1. *Ubth. p.* 237. *n.* 132

Der Bergmanniſche Nachtfalter. *Langs Verz. p.* 203. *n.* 1379, *&c.*

Linnæus gave this little Moth the ſpecific name *Bergmanniana*, in honour of Prof. Bergmann, a naturaliſt of diſtinguiſhed eminence. It is a very pretty Inſect; but, when magnified, its appearance is truly ſuperb, the ground colour which is bright yellow, ſhewing the orange markings to great advantage, and the metallic ſplendour of the burniſhed ſilver appearing like raiſed work above the ſtripes or bands of dark brown that croſs the upper wings.

We have found this Moth at Highgate. The Caterpillars are yellow, with a ſtreak of green down the back; but the green diſappears before the laſt ſkin, in which they are of a pale yellow, without any marks whatever. They feed on white thorn.

Fig. 1, 2. The Caterpillars. Fig. 3. Chryſalis. Fig. 4. The ſame magnified. Fig. 5. Moth. Natural ſize. Fig. 6. The ſame magnified.

FIG.

FIG. VII.

PHALÆNA SQUAMANA.

GREEN TUFTED, OR BUTTON MOTH.

LEPIDOPTERA.

PHALÆNA.

Tortrix *Lin.*

SPECIFIC CHARACTER

AND

SYNONYMS.

Upper wings green, tufted all over. Inferior wings pale brown.

PHAL. PYRALIS SQUAMANA : alis vireſcentibus ſcabris. *Fab. Syſt. Ent.* 651. 36. *Spec. Inſ.* 2. 284. 50.

This is exceedingly rare. The upper wings are very curious, being entirely covered with tufts of feathers, of various ſizes, ſome browniſh, others inclining to white, but moſt of them are green, which is the ground colour of the wings. Of its Larva we are entirely ignorant; nor can we derive any aſſiſtance in that reſpect from entomological writers, as *Fabricius* only has deſcribed the Moth. He ſays it is a native of England, and preſerved in the cabinet of Mr. *Monſon.*

Taken in June.

PLATE CLVIII.

PHALÆNA VERSICOLORA.

GLORY OF KENT MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the baſe, Wings in general deflexed when at reſt. Fly by night.

Bombyx.

SPECIFIC CHARACTER

AND

SYNONYMS.

Antennæ feathered. Male, firſt wings red brown, with tranſverſe waves, black and white lines, and three white ſpots at the extreme angle. Second wings orange. Female larger, and colours paler throughout.

PHALÆNA VERSICOLORA: *Lin. Syſt. Nat.* 2. 817. 31. *Fn. Sv.* 1111.

BOMBYX VERSICOLORA: alis reverſis griſeis nigro-albis thorace antice albo. *Fab. Syſt. Ent.* 565. 34.—*Spec. Inſ.* 2. *n.* 50. *p.* 178.—*Mant. Inſ. T.* 2. *n.* 58. *p.* 113.

Phalæna alis lineis albis et nigris undatis. *Gadd. Satag.* 82.
Roeſ. Inſ. 3. *tab.* 39. *fig.* 3.
Sulzer Hiſt. Inſ. tab. 21. *fig.* 4.
Fueſl. Magaz. 2 *tab.* 1. *fig.* 4.

Der Buntflügel. Der Hagebuchenſpinner.
Das Männchen. *La Verſicolore.* (*Male.*)
Das Weibchen. (*Female.*) *Panz. Faun. Inſ. German.*

This extremely rare Infect is always conſidered as a Britiſh ſpecies, and is uſually found in the cabinet of the Engliſh entomologiſt; yet thoſe are German Inſects generally, for we know only of one ſpecimen which is clearly aſcertained to have been found in this country. The ſpecimen alluded to is in the collection of Mr. Francillon, jeweller, in Newcaſtle-ſtreet, in the Strand: it is a female, and was found by that gentleman's brother in his garden at Carſhalton.

Whether Harris ever met with this Inſect we cannot pretend to determine; he ſays it appears in the winged ſtate in April *. We cannot heſitate to ſuppoſe, that this Moth has been found in England ſeveral times, particularly in *Kent*; but none of theſe remain at this period in the collections of the curious.

The Male differs much from the Female: both ſexes are ſhewn in the annexed plate. Fig. I. Male. Fig. II. Female.

Fueſly, in a German publication, has given the only figure we are acquainted with of the Caterpillar of this Moth; and *Fabricius* has copied his deſcription from the coloured engraving. It is green, with oblique lines of yellowiſh brown, and large ſpots of golden yellow.

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* *Vide Aurelian's* Companion.

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PLATE CLIX.

FIG. I, II, III, IV.

ONISCUS AQUATICUS.

APTERA.

No Wings.

GENERIC CHARACTER.

Legs fourteen. Antennæ taper. Body oval.

SPECIFIC CHARACTER

AND

SYNONYMS.

Aſh colour. Antennæ of four joints. At the end of the tail two bifid appendices.

ONISCUS AQUATICUS: cauda rotundata, ſtylis bifurcis, antennis quaternis. *Syſt. Ent.* 297. 6.—*Spec. Inſ.* 1. 376. 6.

Oniſcus aquaticus lanceolatus, cauda rotundata, ſtylis bifurcis. *Linn. Syſt. Nat.* 2. 1061. 11.—*Fn. Sv.* 2061.

Squilla Aſellus aquatica, cauda rotundata, ſtylis binis bifurcis. *Degeer. Inſ.* 7. 496. 1. *tab.* 31. *fig.* 1.

Aſellus aquaticus *Geſneri. Raj. Inſ.* 43. 1.
Sulz. Hiſt. Inſ. tab. 30. *fig.* 12.
Friſch. Inſ. 10. *tab.* 5.
Schæff. Elem. tab. 22.

This ſpecies is leſs frequent than Oniſcus Aſellus, (Common Woodlouſe). It lives in clear waters, moſt part of the ſummer. It

 ſcarcely

ſcarcely exceeds one half of the length of O. Aſellus in England, yet if we may form an opinion of the German ſpecimens from thoſe figured by *Sulz*, they are larger than with us.

The Oniſcus Agilis of *Perſoon*, figured in Panzer's Work*, correſponds perfectly with ours in ſize; and the minute markings on the ſhells, if carefully examined with a glaſs, will be found nearly alike. The antennæ of the figure in Sulz ſeems rather contrary to the ſpecific character of the inſect; and that of Panzer's, though of another ſpecies, more reſemble thoſe of our ſpecimen.

Of the *Oniſcus Aſellus* we find different coloured ſpecimens, ſome are almoſt white with grey marks, others are nearly deep black; we find alſo, *Oniſcus Aquaticus* liable to variations, though not ſo much as the former inſect in ſome the light ground colour is very diſtinct, in others rather confuſed. Some are deeper coloured; and again, many, when firſt taken, have a fine glowing, olive brown appearance throughout, though leſs vivid than that of Oniſcus Agilis before noticed.

Fig. 1. 2. Natural ſize. Fig. 3. Magnified. Fig. 4. Antennæ.

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* *Faun. Inſ. Germ.*

PLATE CLX.

PHALÆNA PUDIBUNDA.

PALE TUSSOCK MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

Bombyx.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings light, greyiſh: three tranſverſe waves acroſs each upper wing.

PHALÆNA PUDIBUNDA: alis deflexis cinereis, ſtrigis tribus undatis fuſcis. *Lin. Syſt. Nat.* 2. 824. 44.
Fn. Sv. 1118.
Fab. Spec. Inſ. 2. 183. 68.
Ent. Syſt. Tom. 3. *p.* 1. *p.* 438. 97.

Phalæna pectinicornis, elinguis, alis deflexis cinereo undulatis, faſciis tranſverſis obſcurioribus, capite inter pedes porrectos. *Geof. Inſ.* 2. 113. 15.

Phalæna cinerea, alis oblongis, exterioribus quatuor lineis nigricantibus tranſverſis, diſtinctis. *Raj. Inſ.* 185. 7.
Roeſ. Inſ. 1. *phal.* 2. *tab.* 38.
Ammir. tab. 18.
Goed. Inſ. 3. *tab.* 5.
Merian Europ. 1. *tab.* 47.
Degeer Inſ. 1. *tab.* 16. *fig.* 11. 12.

The light Tuffock Moth is found late in September, or during the month of October. The Caterpillar is both beautiful and fingular: it feeds on the oak, on which it is met with, from the latter end of July till the middle of September, at which time it is of its full fize, and becomes a pupa; it fpins a web between the leaves, and remains in the chryfalis about thirty days. The eggs are of a pale browniſh colour, fig. 1.

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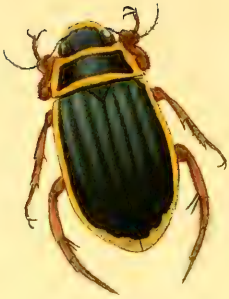

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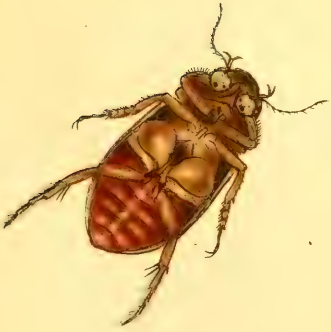

PLATE CLXI.

DYTISCUS MARGINALIS.

LARGE BOAT BEETLE.

COLEOPTERA.

Wings two, covered by two ſhells, divided by a longitudinal ſuture.

GENERIC CHARACTER.

Antennæ taper, or clavato-perfoliated. Feet villous and broad.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black; exterior margin of the thorax and ſhells yellow. Eyes large, round, black.

DYTISCUS MARGINALIS: niger thoracis marginibus omnibus elytrorumque exteriori flavis.
Lin. Syſt. Nat. 2. 665. 7.
Fn. Sv. 769.
Fab. Spec. Inſ. 1. 291. 3.
Ent. Syſt. Tom. 1. 187. 3.

Dytiſcus nigro fuſcus nitidus, thorace undique elytrorumque margine flavo. *Degeer. Inſ.* 4. 391. 2. *tab.* 16. *fig.* 2.

Hydrocantharis noſtras. *Raj. Inſ.* 93. 1.
Mouff. Inſ. 164.
Liſt. Mut. tab. 5. *fig.* 42.
Sulz. Hiſt. Inſ. tab. 6. *fig.* 42.
Roeſ. Inſ. 2. *Aquat.* 1. *tab.* 1.
Schæff. Icon. tab. 8. *fig.* 7.

β. *Dytiſcus ſemiſtriatus* fuſcus, elytris ſulcis dimidiatis decem.
Lin. Syſt. Nat. 2. 665. 8.—*Fn. Sv.* 772.

The transformation of any inſect from one ſtate to another is both curious and entertaining to an enlightened obſerver; yet there are a few ſpecies whoſe manners are ſo peculiar, and their changes ſo aſtoniſhing, that they ſeem to demand more than ordinary attention; and of this deſcription we conſider the ſubject of the annexed plate. If we ſpeak of it as to its manners collectively, one peculiarity implies a contradiction of the other, for it is an aquatic, a terreſtrial, and an aerial creature. Few inſects that inhabit the water, in the perfect ſtate ever quit it; and the generality of thoſe whoſe larvæ live in that element could exiſt for a few minutes only in it, after they become winged inſects; this is particularly noticed of the *Libellulæ*, *Phryganeæ*, *Ephemeræ*, *Tipulæ*, and an immenſe croud of other inſects that are bred in the water; but it appears this inſect in the larva ſtate can leave the water without injury, and in the laſt ſtate, though a winged creature, it lives for the moſt part in the water, and quits it only in the evenings; or when the pool dries up, it uſes its wings in ſearch of another.

In the larva ſtate it is not leſs remarkable for its ſavage diſpoſition, than its formidable appearance. The whole body is covered with a hard ſhell, or coat of mail, and the head is armed with two long, ſemicircular, ſharp-pointed forceps. It is very alert in the water, and when it takes its prey, which conſiſts of ſmaller aquatic inſects, it plunges theſe weapons into them, and through a minute aperture, at the extremity, it extracts all their juices. When the time arrives in which it is to become a pupa, it leaves the water and forms a cavity juſt below the ſurface of the earth of an oval form: how long it remains in this cavity in the pupa ſtate is uncertain. The beetle comes forth in May.

Much doubt has aroſe reſpecting the female of this ſpecies; Linnæus, in the Syſtema Naturæ, deſcribed the ſuppoſed female as *β Dyſticus Semiſtriatus*. Fabricius, in the Species Inſectorum, adds a long liſt of ſynonyms from different entomological writers, ſeveral of whom had figured or deſcribed it as a diſtinct ſpecies before the time of Linnæus, and ſome ſubſequent authors have held the ſame opinion; but in the laſt work, *Entomologia Syſtema*, Fabricius conſiders it to be the

the female, and includes only a few of his former references. Upon the firſt view of theſe opinions the point ſeems undetermined; and though we partly aſſent to the opinion of the laſt writer, we muſt endeavour to be entirely ſatisfied, before we give a figure of Dytiſcus Semiſtriatus.

The upper ſide of this inſect is generally deſcribed black; this is not the colour in living ſpecimens: it is of a fine gloſſy black-green, and the marginal colour brighter than in thoſe that have been dead ſome time. The greeniſh hue on the back ſeldom entirely diſappears.

The fore feet of this beetle have an appendage of a very ſingular ſtructure; it is nearly round, flat beneath, and has in the middle two remarkable circular cavities, with many others more minute: it is ſuppoſed, that through minute apertures in theſe cavities it can emit a kind of oily fluid; or that, by their aſſiſtance, it can collect air bubbles, to raiſe itſelf from the deep parts of the water to the ſurface, in an inſtant. The larva of the Muſca Chamælion, which lives in the water, collects the air in a bubble within the rays of its tail, and thereby raiſes itſelf to the ſurface in like manner.

Fig. 1. The eggs. Fig. 2. The larva. Fig. 3. The pupa.

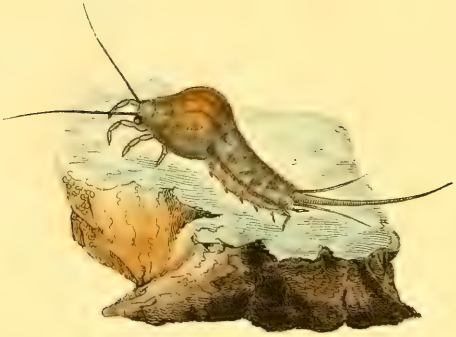

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PLATE CLXII.

FIG. I, II.

LEPISMA POLYPODA.

APTERA.

No Wings.

GENERIC CHARACTER.

Legs ſix, broad and ſcaly at their origin. Palpi two, moveable. Antennæ filiform. Tails three. Body ſcaly.

SPECIFIC CHARACTER

AND

SYNONYMS.

Grey, brown, black intermixed; a very high protuberance on the back. Three tails.

LEPISMA POLYPODA: ſaltatoria, cauda triplici, abdominis ſegmentis ſubtus utrinque villoſis. *Fab. Spec. Inſ.* 1. 380. 2.

Lepiſma polypoda ſcutata, cauda triplici. *Lin. Syſt. Nat.* 2. 1012. 2.

Forticina teres ſaltatrix. *Geoff. Inſ.* 2. 614. 2.

Lepiſma ſquamoſa ſaltatoria, ſetis caudæ tribus intermedia majore. *Strœm. Act. Hafn.* 9. 575. *tab.* 2.

Fig. 1. The natural ſize. Fig. 2. Magnified.

This is a very rare and curious ſpecies; it was found amongſt ſome looſe ſtones, in a damp ſituation, July, 1796.

PLATE

PLATE CLXIII.

PHALÆNA DISPAR.

GIPSEY MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

Bombyx.

SPECIFIC CHARACTER

AND

SYNONYMS.

Female, yellowiſh white with dark tranſverſe zigzac lines acroſs the upper wings. Male, ſmaller, dark brown, with lines and waves of black.

PHALÆNA DISPAR: alis deflexis maſculis griſeo fuſcoque nebuloſis, fœmineis albidis: lituris nigris.

Lin. Syſt. Nat. 2. 821. 44.
Fab. Spec. Inſ. 2 182. 66.
—*Ent. Syſt.* 3. *pars.* 1. 437. 94.
Roeſ. Inſ. 1 *phal.* 2. *tab.* 3.
Reaum. Inſ. 2. *tab.* 1. *fig.* 11. 14.
Merian. Europ. 1. *tab.* 18.
Friſch. Inſ. 1. 14. *tab.* 3.
Schæff. Icon. tab. 28. *fig.* 3—6.
Geoffr. Inſ. 2. 112. 14.

That

That the Phalæna Diſpar was not uncommonly ſcarce about fifteen years ago, is evident from this circumſtance, few collections of Britiſh inſects, that were in the hands of eminent collectors, are without an Engliſh ſpecimen, which was procured about that time; and Harris, in 1775, as well as ſome other writers about the ſame period, ſpeak confidently of its being found in this country. Berkenhout, in his Synopſis, ſays, it is "*frequent* about Ealing, in Middleſex." But this we can, on the beſt authority, diſpute; it never was frequent in that place, though it has ſeveral times been met with, by collectors of inſects; a parcel of eggs being obtained from them, and hatching, many caterpillars were procured; and theſe being carefully attended, ſeveral moths were alſo produced. This is not a very extraordinary circumſtance, as many of the rareſt inſects may become common, when the eggs, or a brood of caterpillars, can be diſcovered.

We are willing to acknowledge, that we have not been more fortunate in our reſearches for the caterpillar or moth of this ſpecies, than any others engaged in the ſcience of entomology; but we have procured from Germany a collection, containing many valuable rarities that have been found in this country at different times; amongſt theſe we have moſt perfect and finely preſerved ſpecimens of *Phalæna Diſpar*, in its ſeveral ſtates, and theſe perfectly agree with thoſe formerly collected in England. Our Plate contains only one figure of the caterpillar, and that is of the female. The male differs only in being ſmaller, and in the ſize of the head, which is leſs in proportion than that of the female.

In this inſtance, we truſt, any apology will be unneceſſary, though the original ſpecimens were not found in this country: it muſt be an advantage to the work to contain figures of the rareſt inſects; and ſhould any of our readers be ſo fortunate as to find the caterpillar, they will be able to determine the ſpecies, and the proper food to rear it on; or, if the brood be extinct, the plate will be more intereſting, as there cannot remain a doubt of its having been indigenous in England.

In

In foreign countries it is very injurious to gardens, and fruit-trees in particular. *Berkenhout* says, it feeds on "Oak, Ash, Apple-trees, &c." but we are rather inclined to doubt his information, except as to the latter, though he is partly sanctioned by *Linnæus*. *Geoffroy* says, it feeds on the Elm.

For the time of its appearance we are indebted to *Harris*; he says the caterpillar changed to chrysalis the 11th of July, the moth appeared July 31; from which it appears certain that he reared it from the caterpillar. He has not, however, given a figure of it in the Aurelian, or any other of his publications.

PLATE CLXIV.

TENTHREDO ROSÆ.

HYMENOPTERA.

Wings four, generally membraneous. Tail of the females armed with a ſting.

GENERIC CHARACTER.

Abdomen of equal thickneſs, and cloſely connected to the thorax. Sting, ſerrated, between two valves. Second wings ſhorteſt.

SPECIFIC CHARACTER

AND

SYNONYMS.

Antennæ, head, and thorax black, with a yellow ſpot on each ſide of the latter. Abdomen yellow. A black ſpot on the anterior margin of the wings.

TENTHREDO ROSÆ: antennis ſeptemnodiis nigra, abdomine flavo, alarum anteriorum coſta nigra.
Syſt. Ent. 322. 26.
Fab. Spec. 1. 413. 39.

Tenthredo Roſæ antennis clavato, filiformibus nigra abdomine flavo, alarum anticarum coſta nigra.
Lin. Syſt. Nat. 2. 925. 30.
Fn. Sv. 1555.

Tenthredo crocea thorace ſupra, capite alarumque margine exteriori nigris. *Geoff. Inſ.* 2. 272. 4.

Tenthredo flava, antennis clavatis triarticulatis, capite thoraceque nigris, alis anticis nigro maculatis. *Degeer. Inſ.* 2. 2. 279. 28. *tab.* 39. *fig.* 27.
Merian. Europ. tab. 144.
Goed. Inſ. 2. *tab.* 3.
Scop. carn. 722.
Reaum. Inſ. 5. *tab.* 14. *fig.* 10. 12.

In the larva ſtate, this ſpecies feeds on the leaves of the Roſe, and from that peculiarity it has received its ſignificant ſpecific name, *roſæ*. The larva caſts its ſkin ſeveral times before it becomes a pupa, its exuviæ we frequently find adhering to roſe-leaves. When the larva is in its laſt ſkin it is yellowiſh, inclining to orange, with many minute black ſpecks, diſpoſed in ringlets, on every joint; but in the early ſtages of its growth we find them of ſeveral ſhades of colours, between green and orange, and ſome partake of both colours, and are ſpeckled with black, as in the laſt ſkin. The larva is very tender, and, we ſuſpect, is liable to ſome diſtemper of a very different kind from any noticed to affect other inſects; it then appears ſickly, and is covered with a whitiſh down, or powder, which flies off on the ſlighteſt touch. We have often found the larva of another ſpecies of the ſame genus covered with this kind of white powder, but as they always died, it is impoſſible to determine to what inſect they belonged.

In the pupa ſtate, the outer caſe is not perfectly oval, but rather flattened on the ſides; it is generally faſtened on a ſtalk. The perfect inſect is found in great plenty during moſt of the ſummer months.

Several early ſyſtematic writers placed this inſect amongſt thoſe whoſe antennæ conſiſted of ſeven joints, or articulations: Whence *Linnæus* * included the number of the joints with the ſpecific cha-

* In the laſt edition of the *Syſt. Nat.* "antennis ſeptemnodiis, &c." is changed for "antennis clavato filiformibus, &c."

racter;

racter; and in the Species Inſectorum *Fabricius* has followed the ſame arrangement. Though with the aſſiſtance of a microſcope we may diſcover in this, and other ſpecies, the exact number of the articulations deſcribed, yet they are too minute to ſerve as part of a good ſpecific character, which ſhould, if poſſible, be ſelected from the moſt conſpicuous and peculiar parts of the inſect. Fabricius ſeems to have been aware of this in his laſt work, Entomologia Syſtematica*; and has made a very judicious alteration; though it appears ſingular for a ſyſtematic writer to change "Antennis filiformibus articulis. 7—9." for "Antennis inarticulatis, extrorſum craſſioribus."

* *Tom.* 2. *p.* 109. 18.

PLATE CLXV.

PHALÆNA OXYACANTHÆ.

EALING'S GLORY.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

Noctua.

SPECIFIC CHARACTER

AND

SYNONYMS.

Firſt wings, dark brown, with two large irregular ſpots of white and reddiſh colour, and a broad ſpace of the ſame next the exterior margin: in ſeveral parts a ſpeckling of fine blueiſh green. Second wings, and body, plain brown.

PHALÆNA OXYACANTHÆ: criſtata alis deflexis bimaculatis: margine tenuiori coeruleſcente; lunula alba.

Lin. Syſt. Nat. 2. 852. 65.—*Fn. Sv.* 1207.
Fab. Spec. Inſ. 2. 232. 114.—*Ent. Syſt. Tom.* 3. *pars.* 2. *p.* 93. 277.
Wien. Verz. 70. 3.
Roeſ. Inſ. 1. *phal.* 2. *tab.* 33.
Wilks. pap. 12. *tab.* 1. *c.* 1.

The

The caterpillar of this ſpecies is found on the White Thorn, in April; in May it becomes a pupa: the moth does not appear before September.

It will be readily conjectured, from its Engliſh name, to be more frequently taken about *Ealing*, in *Middleſex*, than elſewhere, though it is not peculiar, like ſome inſects, to one place only. The caterpillar is ſmooth, or without any hairs; it eats ravenouſly, is very ſluggiſh, and forms a fine ſilky web, in the ground, in which it paſſes to the pupa ſtate *. We find the moth very liable to variation in colours; in ſome ſpecimens the green is very brilliant, in others the red; and again, in others, the lunar white marks are very conſpicuous. In ſome ſpecimens, natives of warm countries, we have ſeen them finer coloured than thoſe from the northern parts of Europe.

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* In the plate of this ſpecies in Roeel's German Inſects, the ſilky cone of the pupa is drawn in the convex part of a leaf.

PLATE CLXVI.

LIBELLULA GRANDIS.

LARGEST DRAGON FLY.

NEUROPTERA.

Wings four, naked, tranſparent, reticulated with veins, or nerves. Tail without a ſting.

GENERIC CHARACTER.

Mouth always armed with more than two jaws. Antennæ ſhorter than the thorax. Wings expanded. Tail of the male forked.

SPECIFIC CHARACTER

AND

SYNONYMS.

Thorax brown, with two oblique lines of yellow on each ſide. Abdomen red-brown, with white ſpots. Wings with a marginal ſpot.

LIBELLULA GRANDIS: alis glauceſcentibus, thoracis lineis quatuor flavis. *Lyn. Syſt. Nat.* 2. 903. 9. *Fn. Sv.* 1467.

AESHANA GRANDIS: thorace lineis quatuor flavis, corpore variegato. *Fab. Syſt. Ent.* 424. 2.—*Spec. Inſ.* 2. *p.* 525. 133. 2.—*Ent. Syſt. T.* 2. *p.* 384. 2.

Libellula fulva, alis flaveſcentibus, thoracis lateribus lineis duabus flavis, fronta flaveſcente, cauda diphylla. *Geoff. Inſ.* 2. 227. 12.

Libellula fuſca, capite rotundato, thorace lineolis quatuor tranſverſis luteis, alis flavicantibus, abdomine cylindrico.
Degeer. Inſ. 2. 2. 45. *tab.* 20. *fig.* 6.

Libellula maxima vulgatiſſima, alis argenteis. *Raj. Inſ.* 48. 1.
Roeſ. Inſ. 2. *Aqu.* 2. *tab.* 2. *fig.* 1. 2?
Schœff. Icon. tab. 2. *fig.* 4.
Act. Nidros. 3. 412. *tab.* 6. *fig.* 9.

If we except a very ſmall number of exotic *Libellulæ*, *L. Grandis* is the largeſt inſect of the genus known: it is certainly the largeſt of the European ſpecies.

It is not uncommon in woods; but never flies far from the water. In the larva ſtate it lives in the water, and, like others of the ſame genus already deſcribed in this work, does not quit it till it becomes a winged creature. In the larva ſtate it alſo reſembles in its manners thoſe voracious inſects that devour ſmaller inſects, and in the winged ſtate it takes moths and other weak inſects in its flight. Is found in moſt of the ſummer months.

PLATE CLXVII.

STAPHYLINUS RIPARIUS.

BANK ROVE-BEETLE.

COLEOPTERA.

GENERIC CHARACTER.

Antennæ moniliform*. Elytra not more than half the length of the abdomen. Wings concealed. Tail armed with two oblong veſicles.

SPECIFIC CHARACTER

AND

SYNONYMS.

Red-brown. Shells blue. Head and end of the abdomen black.

STAPHYLINUS RIPARIUS: *Lin. Syſt. Nat. n.* 8. *p.* 684. *Ed.* 13. *n.* 9. *p.* 2038.—*Fn. Sv. n.* 846.

Staphylinus gregarius. *Scop. Carn. n.* 308. *ic.* 308.

Staphylin de rivages. *Degeer. Inſ.* 4. *p.* 28. *n.* 14. *tab.* 1. *fig.* 18. *Geoffr. Inſ.* 1. *n.* 21. *p.* 369. *Paykull.* monogr. Staphyl. *n.* 19. *p.* 27. *Schäff. Icon. Inſ. Ratiſb. tab.* 71. *fig.* 3. *Harrer* Beſchr. d. Schäff. Inſ. 1. *Th. n.* 417. *p.* 253.

PÆDERUS RIPARIUS: rufus elytris coeruleis, capite abdominiſque apice nigris. *Fab. Syſt. Ent.* 1. *p.* 168.—*Spec. Inſ. T.* 1. *p.* 339.—*Mant. Inſ.* 1. *p.* 223.—*Ent. Syſt.* 2. *p.* 536.

Der Strandttraubenkäfer. Der Uferraubkäfer. *Panz. Faun. Inſ. Germ.* Inhalt des neunten Hefts. tab. 11.

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* Like a necklace of ſmall beads.

The Staphylini were formerly known among Engliſh collectors by the general appellation *Rove-Beetles;* we have in the preſent inſtance adopted this Engliſh name, and added the only ſpecific diſtinction which occurs likely to convey the meaning of Linnæus, when he named it *Riparius.*

All the inſects of this genus are very voracious. The larvæ ſo much reſemble the perfect inſects, that they can hardly be diſtinguiſhed from them. *Staphylinus Riparius* is found in moſt parts of Europe. It frequents moiſt ſandy places, and the ſides of banks. Found in May. The natural ſize and magnified appearance is given in the annexed plate.

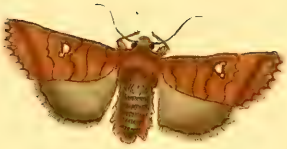

PLATE CLXVIII.

PHALÆNA SATELLITIA.

SATELLITE MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

Noctua.

SPECIFIC CHARACTER

AND

SYNONYMS.

Firſt wings, exterior margin indented: reddiſh brown with ſeveral dark ſtreaks acroſs: in the center a yellow ſpot between two ſmaller white ſpots. Second wings greyiſh.

PHALÆNA SATELLITIA: criſtata alis deflexis dentatis brunneis: anticis puncto flavo inter punctula duo alba. *Fab. Spec. Inſ.* 2. 230. 104. *Lin. Syſt. Nat.* 2. 855. 176. *Roeſ. Inſ.* 3. *tab.* 50.

The caterpillar of this moth feeds on whitethorn, currant and gooſeberry-trees, &c. The chryſalis or pupa is encloſed in a ſtrong web of a greyiſh colour; it is of a dark brown colour. The caterpillar is found in June. In July or Auguſt, the moth comes forth.

The upper wings of this moth have a very ſtriking characteriſtic; that is, the yellowiſh lunar mark within two ſmall ſpots: from this character it has been aptly named Satelliti; and in Engliſh, the Satellite Moth.

PLATE CLXIX.

PAPILIO CARDAMINES.

ORANGE-TIP BUTTERFLY, or,

WOOD LADY.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ terminate in a club. Wings erect when at reſt. Fly in day-time.

* * * * * * * Danai Candidi.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings rounded, edges very ſlightly ſcalloped. Above white, exterior half of the upper wings orange; with a black ſpot in the centre. Underſide of under wings marbled with green. Female has no orange tip.

PAPILLIO CARDAMINES: alis rotundatis integerrimus albis: poſticis ſubtus viridi marmoratis. *Lin. Syſt. Nat.* 2. 761. 85.—*Fn. Sv.* 1039.

Papilio minor alis exterioribus albis macula inſigni crocea ſplendentibus, interioribus ſuperne albis, ſubtus viridi colore variegatis. *Raj. Inſ.* 115.
Roeſ. Inſ. pap. 2. *tab.* 8.
Schæff. Icon. tab. 91. *fig.* 1. 3.
——— *Elem. tab.* 94. *fig.* 8.

PAPILIO CARDAMINES. *Fab. Spec. Inſ.* 2. 43. 179.
Hafn. Icon. tab. 9. *fig.* 1.
Eſp. pap. P. *tab.* 4. *fig.* 1.
——— *tab.* 27. *fig.* 2.
Wilk. pap. 2. *p.* 50. *tab. a.* 5.
Robert. Icon. tab. 21.

Lady of the Woods. *Harris.*

This pretty Butterfly may be taken in great abundance in the month of May. The caterpillar is found on various kinds of graſs and low herbage: Harris ſays it feeds on Wild Cole; and other writers mention, Thlaſpi Burſa Paſtoris*, and Cardamine Pratenſis†.

The male inſect only, has the bright orange colour on the wings, the female is white, with ſome few marks of black: the underſide is beautifully marbled and mottled with green in both ſexes.

The Caterpillar is common in May and June, and a later brood is found in July; about the latter end of which month it becomes a chryſalis: In May following the Butterfly is produced.

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* *Shepherd's Purſe.* † Common Lady's Smock, or Cuckow-flower.

PLATE CLXIX.

PHALÆNA SAMBUCARIA.

SWALLOW-TAIL MOTH.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

Geometra.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings angulated, pale yellow, with two tranſverſe lines on each. Second wings with a tail each, and two black ſpots,

PHALÆNA SAMBUCARIA: pectinicornis, alis caudato angulatis flaveſcentibus, ſtrigis duabus obſcurioribus, poſticis apice bipunctatis. *Lin. Syſt. Nat.* 2. 860. 203.—*Fn. Sv.* 122.

Phalæna ſeticornis ſpirilinguis, alis patentibus ſulphureis, linea duplici tranſverſa obſcuriori, inferioribus caudatis. *Geoff. Inſ.* 2. 138. 58.

Phalæna

Phalæna media ochroleucos, alis ampliſſimis, exterioribus duabus lineis tranſverſis, e fulvo virentibus, interioribus, una diviſis. *Raj. Inſ.* 177. 1.

Phalæna antennis filiformibus, alis latis angulatis luteis, ſtrigis duabus obſcurioribus. *Degeer Inſ. Verſ. Germ.* 2. 1. 327. 3.

Albin Inſ. tab. 94.
Roeſ. Inſ. 1 *phal.* 3. *tab.* 6.
Petiv. Gazoph. tab. 51. *fig.* 6.
Wilks pap. 38. *tab.* 1. 6. 2.
Clerk. Icon. tab. 50. *fig.* 2.
Schœff. Icon. tab. 93. *fig.* 8.
Sepp. Inſ. 6. 1. *tab.* 1.
Wien Verz. 103. 1.

Inſects, when in the larva ſtate, have various means of protecting, or concealing themſelves from other ſpecies that would annoy them, as well as from birds who prey on them. This remark is partly juſtified by the ſubject of our annexed plate, the larva of which we find is not furniſhed with any means of defence when attacked: nor of agility to run away, or ſecrete itſelf from its enemies; but to compenſate for this, nature has formed it with a ſkin of ſuch a colour, and ſtructure, that its greateſt ſafety is in its inaction. We frequently ſee it faſtened by its hind feet to a ſmall twig or branch in ſuch a poſture, that unleſs it moves, it is ſcarcely poſſible to diſcover it. It is ſometimes in an erect poſition, at others with its head downwards, but in an oblique poſition; and, as it hangs in this manner, without the leaſt appearance of life for a conſiderable time, it exactly reſembles a ſmall twig of the branch to which it is attached.

The

The caterpillars are not uncommon in April, or early in May. It feeds on ſeveral plants; particularly, when in confinement, it prefers bramble, or white thorn. It is found in the winged ſtate in June, ſo that it remains a very ſhort time in chryſalis.

PLATE CLXX.

PHALÆNA FRAXINI.

CLIFDEN NON-PAREIL.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

Noctua.

Wings ſcalloped, grey, with tranſverſe undulated bands of black; in the centre of the wing; ſecond wings black, with a broad curved band of blue acroſs the middle.

PHALÆNA FRAXINI: criſtata, alis dentatis cinereo nebuloſis: poſticis ſupra nigris: faſcia cæruleſcente.
Lin. Syſt. Nat. 2. 843. 125.
Fn. Sv. 1165.
Fab. Syſt. Ent. 602. 51.—*Spec. Inſ.* 2. 221. 72.—*Ent. Syſt. Nat. T.* 3. *p.* 2. 55. 152.

Phalæna ſeticornis ſpirilinguis, alis deflexis, ſuperioribus cinereo fuſcoque, undulatis, inferioribus nigris, faſcia tranſverſa cœrulea. *Geof. Inſ.* 2. 151. 83.
Roeſ. Inſ. 4. *tab.* 28. *fig.* 1.
Merian Europ. tab. 46.
Ammir. Inſ. tab. 25.
Wilk. pap. 45. *tab.* 1. *a.* 2.
Fyeſl. Arch. tab. 15. *fig.* 1. 2.
Wien. Verz. 90. 2.

From

From the Engliſh name given to this beautiful and extremely ſcarce moth, we learn that it has been taken at Clifden: we have alſo heard of its being found in other parts of England; and, if we can rely on our information, a ſpecimen was taken in July, 1795, in the fields.

We have never underſtood that the larva had been found in this country. Feeds on the aſh tree.


J.t. L'Admiral. Jan.
Amsterdam

PLATE CLXXI.

THE CATTERPILLAR AND CHRYSALIS OF *PHALÆNA FRAXINI.*

The rarity of this ſubject muſt plead our apology for the liberty we have taken in introducing it into our work. It is the only inſtance in which we have given place to a copy from the works of others of any ſubject, however rare. We have in our poſſeſſion a preſerved ſpecimen of the caterpillar of Phalæna Fraxini, ſent from Germany; but as it is of that kind in which the colours and form cannot be preſerved well, we have preferred giving an exact copy of the caterpillar as well as chryſalis, from the works of a reſpectable, but little known author, *Ammiral.* This author appears to have been ſingularly fortunate in preſenting a figure of the caterpillar, when the accurate Roeſel did not publiſh a figure of the moth till his fourth volume, and was not then in poſſeſſion of the caterpillar.

Some of our readers will be perhaps ſurpriſed to find that our figures preciſely agree with thoſe contained in the Aurelian of our countryman *Harris*; but whoever poſſeſſes the plates of *Ammiral*, will find that in the moſt minute parts of Harris's plates, he has only traced and reverſed the originals of *Ammiral* throughout; and in many inſtances by a clumſy imitation, in reverſing the foliage and flies, has even ſpoilt the effect, and loſt ſight of the accuracy of them.

PLATE CLXXII.

PAPILIO VIRGAUREÆ.

SCARCE COPPER BUTTERFLY.

LEPIDOPTERA.

Papilio ruralis. *Lin.*
Hesperia ruralis. *Fab.*

GENERIC CHARACTER.

Antennæ terminated in a club. Wings, when at rest, erect. Fly by day.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings angulated. Upperside of a fine bronze, or red copper colour, with a black margin. Underside light brown, with several white spots, some having a black speck near the middle.

PAPILIO RURALIS VIRGAUREÆ. *Lin. Syst. Nat. n.* 253. *p.* 793. *edit.* 12. *n.* 253. *p.* 2359.—*Faun. Suec. n.* 1079.

Papilio ruralis Virgaureæ. Fab. Syst. Ent. n. 569. *p.* 126.—*Spec. Ins.* 2. 569. *p.* 126.—*Mant. Ins.* 2. 721. *p.* 79.

Hesperia ruralis Virgaureæ: alis subangulatis fulvis: margine atro, subtus punctis, nigris albisque.
Fab. Ent. Syst. 4. 173. *p.* 309.

Le Bronzè. *Geoffr. Inf.* 2. 35. *p.* 65.
Papil. d'Europ. tab. 44. *n.* 92.
Esper eur. Schmett. 1. *Th. tab.* 19. *fig.* 2.
Borkhausen eur. Schmett. 1. *Th.* 1. *p.* 141. *et p.* 269.
Syst. Verz. d. W. Schmett. 1. *p.* 80.

L'Argus satiné. *Ernst.*

Der Goldrathenfalter. Der Feverpapilion. *Panz. Faun. Inf. Germ.*

A specimen of this very superb and rare butterfly has been taken at Cambridge. It has always had a place in the cabinets of English collectors of consequence; but we cannot learn by whom it was first discovered in this country. Papilia Virgaureæ and Papilio Hippothoe, has been frequently confounded with each other; but on a comparison, a material difference will be discovered.

Harris has made one error, which it is of importance to the English collector to correct; he says, "*Papilio Virgaureæ*, copper, feeds on grass, found in June and August in meadows, is shining copper, spotted with black." From this it appears he could mean no other than the common copper butterfly, which is found in June and August in meadows, *Papilio Phlæas*; for though the scarce copper butterfly was probably found in his time, it must have been very rare;

rare; and he would not have omitted in his catalogue of Engliſh Lepidopteræ, to mention an inſect ſo common as *Papilio Phlæas*, if he had noticed the other. He has alſo the ſame error in his Aurelian.

PLATE CLXXIV.

BUPRESTIS VIRIDIS.

GREEN BUPRESTIS.

COLEOPTERA.

GENERIC CHARACTER.

Antennæ ſetaceous, and as long as the Thorax. Head drawn within the Thorax.

SPECIFIC CHARACTER

AND

SYNONYMS.

Linear, ſhining blue and green in ſhades, a few exceedingly minute ſpots ſprinkled over ſome parts.

BUPRESTIS VIRIDIS: elytris integerrimis linearibus punctatus, corpore viridi elongato. *Fab. Spec. Inſ.* 1. 281. 54.—*Syſt. Ent.* 223. 38.—*Linn. Syſt. Nat.* 2. 663. 25.—*Fn. Sv.* 762.

Bupreſtis viridis nitida, corpore elongato, elytris linearibus ſcabris integerrimus. *Degeer. Inſ.* 4. 1. 33. 6. *tab.* 5. *fig.* 1.

Cucuius viridi cupreus oblongus. *Geoff. Inſ.* 1. 127. 5.

Mordella ferraticornis. *Scop. Carn.* 190.

The Larva of this Inſect feeds on the Birch-tree (Betula Alba). It is rarely met with in England; and if we may form any opinion from the ſilence of Naturaliſts, it is not common in any part of Europe.

F. I. Natural ſize.

PLATE CLXXV.

PHALÆNA SCHÆFFERELLA.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

TINEA.

SPECIFIC CHARACTER

AND

SYNONYMS.

Firſt wings orange, with ſpots and ſtripes of ſilver: a deep black fringe. Second wings pale black.

TINEA SCHÆFFERELLA: *Linn. Syſt. Nat.* 2. 898. 443.—*Fn. Sv.* 1409.

TINEA SCHÆFFERELLA: aliis nigris: diſco flavo; ſtrigis lineis duabus punctiſque tribus argenteis. *Fab. Spec. Inſ.* 2. 303. 79.—*Ent. Syſt. Tom.* 3. *p.* 2. 322. 155.

Linnæus ſays this beautiful little Inſect feeds on the Cheſnut. We found it on the Tanſey, in May, 1796.

It has not been figured by any author that has fallen under our inſpection; and the Synonyms given by Fabricius, in his laſt work, refer only to the deſcription given by Linnæus, and *Wien. Verz.** 138. 21.—The ſpecific name was adopted by Linnæus, and continued

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* Catalogue of Inſects found near Vienna.

by Fabricius, in honour of Schæffer, Author of the Insecta Ratisbonensia, and Fundamenta Entomologica. *Quarto.* 1747.

The natural size of this Insect is given at the bottom of the Plate; and as it was too minute to admit of the elegant colouring of the original, two figures of its magnified appearance is given above, one in its resting position, the other with the Wings expanded.

1

♂

2

PLATE CLXXVI.

NOTONECTA STRIATA.

STRIATED BOAT FLY.

HEMIPTERA.

Upper Wings ſemi-cruſtaceous, not divided by a ſtraight ſuture, but incumbent on each other. Beak curved downward.

GENERIC CHARACTER.

Beak inflected. Antennæ ſhorter than the Thorax. Wings croſſed. Hind Feet hairy, and formed for ſwimming.

SPECIFIC CHARACTER

AND

SYNONYMS.

Depreſſed. Head and Legs yellow; reſt pale brown, with numerous minute ſpots and ſtreaks of dark brown.

NOTONECTA STRIATA. *Lin. Syſt. Nat.* 2. 712. 2.—*Sv.* 904.
SIGARA STRIATA: elytris pallidis: lineolis tranſverſis undulatis numeroſiſſimis fuſcis. *Fab. Spec. Inſ.*—*Ent. Syſt. T.* 4. 207. 2.
Corixa. *Geoffr. Inſ.* 1. 478. 1. *tab.* 9. *fig.* 7.
Stoll. Cicad. 2. *tab.* 15. *fig.* 13. *B.*
Roeſ. Inſ. 3. *tab.* 29.
Schæff. Elem. tab. 50.
——— *Icon. tab.* 97. *fig.* 2.
Fyeſt. Helvet. 25. 469.

There are two varieties of this ſpecies: one kind being at leaſt twice the ſize of the other; in every other reſpect they perfectly agree. This Inſect is commonly ſeen on ſtill waters, in the Summer; when they cauſe a gentle agitation of the ſurface, by the quickneſs of their motions, and row along on their back, with their hinder legs, which are formed for ſwimming. Both kinds are ſhown in the Plate, FIG. I. and II. FIG. III. is the largeſt ſort magnified to exhibit the curious markings of the Elytra.

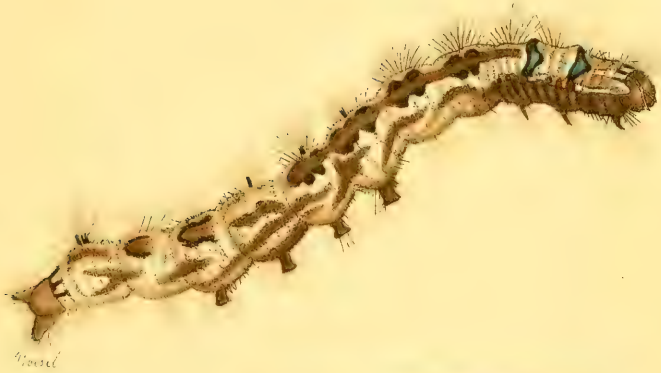

PLATE CLXXVII.

THE CATERPILLAR OF *PHALÆNA PINI.*

We have introduced in the annexed plate, figures of the Caterpillars of Phalæna Pini, copied from the works of the two moſt accurate entomologiſts that have deſcribed or figured the inſects of any part of the European continent; and though unfortunately the deſcriptions are written in a language ſo little underſtood as to be wholly uſeleſs; the figures are very intereſting. In this inſtance we have deviated no more from our original plan than when we introduced the larva of *Sphinx Euphorbiæ*, and *Phalæna Fraxini*; and we flatter ourſelves in thus endeavouring to give the hiſtory of a rare inſect complete, the approbation expreſſed by our ſubſcribers, on former occaſions, will not be withheld on the preſent.

Roeſel, in 1746, publiſhed the *Inſecten Beluſtigung*; in which work we find a figure of the Caterpillar of Phalæna Pini: it accords with the deſcription given by Fabricius; perhaps the deſcription was taken from Roeſel's plate. "Larva ſubcaudata, albo griſeo fuſcoque variegata, collaribus coeruleis: punctis utrinque rufis." *Fab. Syſt. T.* 3. *p.* 2. 426. 62.

Kleeman, the relation and ſucceſſor of Roeſel, in the third part of his ſupplement, Plate 6. fig. 7*. has ſhewn the Caterpillar of this

* Publiſhed in 1793.

inſect in another ſkin, or probably it is the Caterpillar of the male, Roeſel having only the female in his works; in this ſpecimen the colours are bright, and it is particularly diſtinguiſhed by the collar being red inſtead of blue.—As this part of his work is ſcarcely known, and has not yet been noticed by *Fabricius*, we cannot collect the opinion of any ſyſtematical writer, whether it be the other ſex, or only a different ſkin.

The pupa we received with the moths; and the eggs figured in plate 178, were taken from the body of the female.

PLATE CLXXVIII.

PHALÆNA PINI.

Pine Lappet Moth.

Lepidoptera.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

Bombyx.

Antennæ of the male feathered.

SPECIFIC CHARACTER

AND

SYNONYMS.

Firſt wings grey, ſpeckled with brown: a broad ſpace of red brown acroſs each, and a triangular white ſpot near the anterior margin.

Bombyx Pini: alis reverſis griſeis: faſcia ferruginea punctoque triangulari albo. *Linn. Syſt. Nat.* 2. 814. 24.—*Fn. Sv.* 1104.—*Fab. Syſt. Ent.* 3. *p.* 2. 426. 62.
Merian. Europ. tab. 22.
Wilks. pap. 29. *tab.* 3. *b.* 5.
Roeſ. Inſ. 1. *phal.* 2. *tab.* 59.
Schæff. Icon. tab. 86. *fig.* 1—3.
Kleman. Inſ. 2. *Suppl. pl.* 6. *fig.* 7.

The Pine Lappet Moth is one of thoſe ſpecies of inſects, that we can have no doubt are natives of this country, from the concurrent teſtimony

teſtimony of the reſpectable authors; though from the ſcarcity of many amongſt them, we ſhould be ſcarcely inclined to admit them into an Engliſh collection without ſuch authority. Perhaps the rarity of ſome of thoſe inſects ſhould be rather attributed to the little attention beſtowed on the ſcience of Entomology by ſuch as reſide in parts of the kingdom that are moſt favourable to the increaſe of inſects in general; or to thoſe particularly rare ſpecies that are local, or feed only on plants of one kind; ſuch as the *Sphinx Euphorbiæ*, and many others.

Wilks has given the Pine Lappet Moth in the third plate of the Engliſh butterflies. *Harris* has not figured it in the Aurelian*, but in the Pocket Companion† he not only deſcribes it amongſt the Engliſh Lepidoptera, but ſays, the time of its changing into Chryſalis is *May*, and that it appears in the winged ſtate in June; from this we muſt ſuppoſe, that he had reared it from the Caterpillar. *Berkenhout*, in his ſynopſis of the natural hiſtory of Great Britain‡, has given it without heſitation as an Engliſh inſect; and the authority of a little tract on inſects, by Martin§, may be adduced as a further confirmation of its being a native of this country.

This Inſect is not uncommon in Germany. Schæffer has figured it amongſt the inſects that are to be found in the environs of Ratiſbon; and Roeſel, without conſidering it a local ſpecies, has given it as a native of Germany. Whether it is found in other parts of Europe, except Switzerland and Germany, we cannot decide; but we have the preciſe ſpecies from *Georgia* in *North America*.

We obſerve a conſiderable difference between the colouring of this moth in the works of *Schæffer* and *Roeſel*, which is the more remarkable, as they both deſcribe the inſects of the ſame country; the figure given by the latter is much darker in the cheſnut colour, and the grey has no appearance of an intermixture of red ſpecks and markings, like that figured in *Schæffer*, which inclines very much to red or fleſh colour throughout. Roeſel has only figured the female; Schæffer has given both ſexes.

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* Publiſhed in 1766. † 1776. ‡ 1789. § 1785.

PLATE

PLATE CLXXIX.

PHALÆNA OO.

Heart Moth.

Lepidoptera.

GENERIC CHARACTER.

Antennæ taper from the baſe. Wings in general deflexed when at reſt. Fly by night.

Noctua.

Antennæ like a briſtle.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings buff, ſtreaked, and marked with red-brown: and a double o in the middle of upper wings.

Noctua Oo: criſtata alis deflexis cineraſcentibus ferrugineo ſtrigoſis oo notatis. *Lin. Syſt. Nat.* 2. 832. 81.—*Fn. Sv.* 1139.
Fab. Syſt. Ent. t. 3. *p.* 2. 247.
Wien. Verz. 87. 1.
Roeſ. Inſ. 1. *Phal.* 2. *tab.* 63.

This Moth is far from common. It is found on the oak, in the Caterpillar ſtate, late in the ſummer; changes to chryſalis in the firſt week

week of October; the fly appears late in April, or early in May. *Harris* greatly miſtook the meaning of Linnæus, when he ſays, "Linnæan name, *Sphinx* Oo."

PLATE CLXXX.

ASILUS CRABRONIFORMIS.

HORNET FLY.

DIPTERA.

Wings, two.

GENERIC CHARACTER.

Trunk horny? long ſtraight, bivalved.

SPECIFIC CHARACTER

AND

SYNONYMS.

Body hairy; the three ſegments next the thorax black, the four others yellow.

ASILUS CRABRONIFORMIS: abdomine tomentoſo antice ſegmentis tribus nigris poſtice flavo inflexo. *Fab. Spec. Inſ.* 2. 461. 5.—*Linn. Syſt. Nat.* 2. 1007. 4.

Aſilus ferrugineus abdominis articulis prioribus atris, poſteribus quatuor flavis. *Geoff. Inſ.* 2. 468. 3. *tab.* 17. *fig.* 3.

Aſilus ſubhirſutus, antennis ſetigeris, abdomine antice nigro poſtice flavo fulvo. *Degeer. Inſ.* 6. 244. 7. *tab.* 14. *fig.* 3.

Muſca maxima crabroniformis. *Raj. Inſ.* 267.

Erax crabroniformis. Scop. carn. 974.

Schæffer. Icon. tab. 8. *fig.* 15.

——— *Elem. tab.* 13.

This

This is a very confined genus. Fabricius in the Species Inſectorum deſcribes only thirty-three kinds; of theſe not more than eight are natives of this country. The Aſilus Crabroniformis is the largeſt, and is not uncommon in ſome places in the ſummer, particularly frequenting wet meadows, and flying buſily about the middle of the day amongſt flowers.

Its proboſcis is a curious inſtrument; the ſting of it is very painful, and cauſes a ſwelling.

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Page 85, *for* Plate 169, *read* Plate 170.
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Page 90, line 5, *after* fields, *add* near Hoxton.
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